C. W. McCLURE.

HOOP FASTENING MEANS FOR SILOS.

APPLICATION FILED MAY 31, 1911.

1,015,815. Patented Jan. 30, 1912.

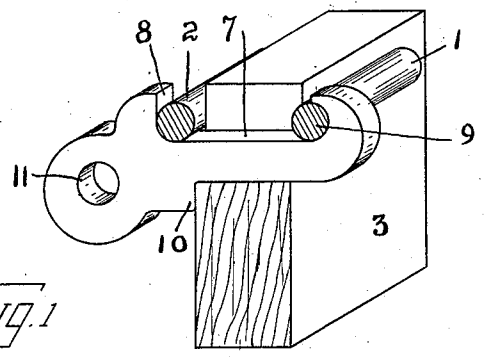

FIG. 1

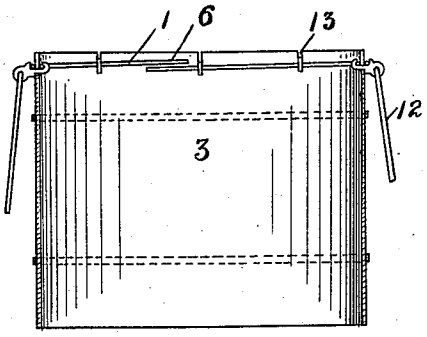

FIG. 2

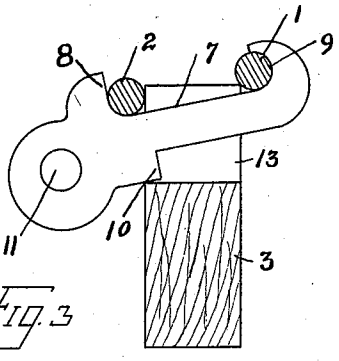

FIG. 3

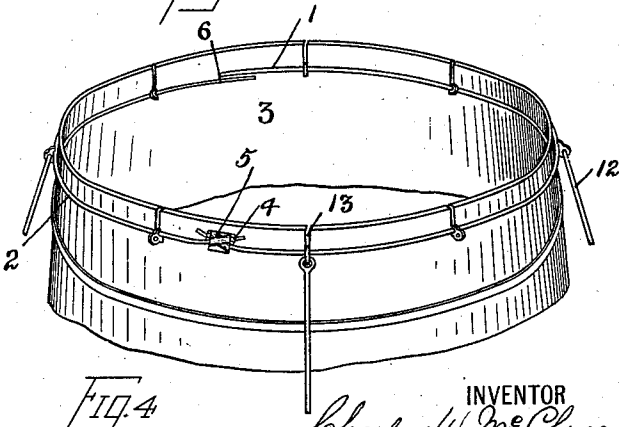

FIG. 4

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HOOP-FASTENING MEANS FOR SILOS.

1,015,815. Specification of Letters Patent. Patented Jan. 30, 1912.

Application filed May 31, 1911. Serial No. 630,514.

To all whom it may concern:

Be it known that I, CHARLES W. McCLURE, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Hoop-Fastening Means for Silos; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to silos and pertains more particularly to means for fastening together the hoops by which the tops of the silo staves are bound together.

As is well known, wooden silos are commonly constructed of staves, the edges of which are tongued and grooved and bound together by means of hoops.

It has heretofore been customary to provide at the top of the silo two hoops, one inside and one outside, and to provide each of these two hoops with means for adjusting it. The outer hoop has usually been threaded at its two ends and arranged to be tightened by means of suitable adjusting lugs. When the silo is empty and drying, as is usually the case in summer, the staves shrink and become loose. The outer hoop must then be tightened in order to restore the strength and stability of the silo.

It has heretofore been customary to connect the outer and inner hoops together at intervals around the circumference of the silo by means of bolts passing through the staves, but it has been found in practice that such bolts are impracticable for the reason that the outer hoop cannot be satisfactorily tightened unless the bolts are released from their clamping engagement with the inner hoop and it is a very difficult task to loosen the bolts from inside for the reason that the silos are usually very high, and on account of the hoops and cross-bars spanning the vertical silo opening at intervals, it is impossible to get a ladder of sufficient length into the silo to reach from the ground to the bolts that fasten together the upper hoops.

The object therefore of my present invention is to provide a simple and inexpensive means for clamping together the inner and outer hoops at the top of a silo, and a further object is to so construct such clamping means, which I term the "connector" that the downward pull of the guy rods will tend to increase the clamping action which the inner hoop exerts on the stave.

With these and certain other objects in view, which will appear later in the specification, my improvement consists in the devices to be described and pointed out in the claims.

In the drawings, which form a part of the specification, Figure 1 represents a part sectional view of the upper end of a stave, showing the connector in use; Fig. 2 is a vertical section of the upper end of a silo, showing the inner hoop; Fig. 3 is a detail of the upper end of a stave, showing the connector in position to be assembled on the stave; and Fig. 4 is a perspective view of the upper end of a silo, showing the inner and outer hoops in place.

As is clearly shown in the drawings, the inner hoop 1 and the outer hoop 2 are arranged around the upper end of a silo 3. The outer hoop is tightened by means of the nuts 4 and the lugs 5, as is customary. The inner hoop 1 is not provided with tightening nuts and lugs, but its ends are unattached as at 6.

The connector consists preferably of a flat bar, the upper edge 7 of which is notched, the outer wall 8 of the notch being substantially upright and the inner wall 9 being curved or hooked to receive the inner hoop 1, as illustrated in Figs. 1 and 3. The lower edge of the bar is formed with a shoulder 10 to engage the outer face of the stave 3, as shown in Fig. 1. The outer end of the bar is formed with an opening 11 to take the guy rods 12 by which the silo is stayed.

The hoops and connectors are assembled on the silo as indicated in Fig. 3, the connectors being dropped into vertical slots 13 formed in the tops of the staves, the shoulders 10 resting on the staves as indicated in Fig. 3. The inner and outer hoops are then put in position, the inner end of the connector being driven down until the shoulder 10 drops down and engages the outer face of the stave. The outer hoop 2 is then tightened by means of the nut 4, drawing the staves close together and decreasing the circumference of the silo at the top. While the outer hoop 2 is being tightened, the unconnected ends 6 of the inner hoop are free to slide past each other to permit the inner hoop to contract. The guy rods 12 are then drawn taut and the inner hoop 1 is drawn

forcibly outward by the pull on the connector. The downward pull of the guy rods causes the shoulder 10 to firmly grip the outer face of the stave, and the upward and outward strain exerted on the hoop 1 by the curved inner wall 9 of the connector firmly locks the inner hoop, the stave, and the connector together.

The connectors may be assembled on or removed from the staves without entering the silo, it being only necessary to release the guy rods 12, slackening the strain on the outer hoop 2 and drive the connector up, as indicated in Fig. 3.

The connectors are simple in construction, cheap to manufacture, and have no threads or nuts exposed to corrosion.

Having thus described my invention, what I claim as my invention and desire to secure by Letters Patent, is:—

1. In a silo, the combination with staves having their upper ends slotted, of an inner and an outer hoop, and a connector comprising a bar having its upper edge formed with a notch, one wall of said notch being upright, the opposite wall of said notch being curved and adapted to receive said inner hoop, the lower edge of said bar formed with a shoulder adapted to engage the outer face of the stave, a guy, and means for attaching said guy to the outer end of said connector.

2. In a silo, the combination with staves having their upper ends slotted, of an inner and an outer hoop, and a connector comprising a bar having its upper edge formed with a notch, the extremities of said notch being adapted to receive said hoops, the lower edge of said bar formed with a shoulder adapted to engage the outer face of the stave, a guy, and means for attaching said guy to the outer end of said connector.

3. In a silo, the combination with staves having their upper ends slotted, of an inner and an outer hoop, and a connector comprising a bar having its upper edge formed with a notch adapted to receive said inner and outer hoops respectively, a guy, and means for attaching said guy to the outer end of said connector.

4. In a silo, the combination with staves having their upper ends slotted, of an inner and an outer hoop, and a connector received in said slot, said connector comprising a bar having its upper edge formed with a notch, one wall of said notch being upright, the opposite wall of said notch being formed to receive said inner hoop.

5. In a silo, the combination with staves having their upper ends slotted, of an inner and an outer hoop, and a connector received in said slot, said connector comprising a bar having its upper edge formed with a notch, the extremities of said notch being adapted to receive said hoops, the lower edge of said bar formed with a shoulder adapted to engage the outer face of the stave.

In testimony whereof, I affix my signature in presence of two witnesses.

CHARLES W. McCLURE.

Witnesses:

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